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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,177	01/14/2005	Yoji Ito	030662-117	2933
21839 7590 08/22/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER SESE, JASON A	
			ART UNIT 1709	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,177

Applicant(s)

ITO, YOJI

Examiner

Jason A. Sese

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 23 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-24 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>14 January 2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-22, drawn to a polarizing plate.

Group II, claim(s) 23-24, drawn to a method for preparing a polarizing plate.

2. The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature of all the groups is a polarizing plate comprising a polarizing membrane and an optically anisotropic layer formed from liquid crystal molecules with or without an orientation formed between. This element cannot be a special technical feature under PCT Rule 13.2 because the element is shown in the prior art. U.S. Patent No. 6,400,433 teaches a polarizing plate consisting of a polarizing film, with a layer of optical anisotropic of liquid crystals formed thereupon, disclosing also the use of an orientation layer.

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3. During a telephone conversation with Mr. Roger Lee on 30 July 2007, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-24 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1- 2, 7-10, 13, 15-19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Arakawa et al. (U.S. Patent No. 6,400,433 B1).

3. The subject matter of Claim 1 is described in column 2, lines 15-18, where a polarizing plate comprising a polarizing membrane, optically anisotropic layer A and optically anisotropic layer B. One of the anisotropic layers must be formed directly on the polarizing membrane, as claimed by the applicant. Figure 3 also shows a configuration of the polarizing plate, wherein an orientation layer is used.

4. The subject matter of Claim 2 is disclosed in column 12, lines 30-32, where Arakawa et al. disclose that the preferred incline angle of rod-like liquid crystal molecules is in the range of 0° to 40°, which overlaps the range of more than 5° claimed by the applicant.

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5. The subject matter of Claim 7 is described in column 26, lines 36-39, where Arakawa et al. state that the polarizing plate can be used in a optical device such as an antireflection film, which inherently implies the use of an anti-reflection layer, as claimed by the applicant.

6. Further, the subject matter of Claim 8 is described in column 25, lines 52-53, where Arakawa et al. teach that the polarizing plate can further comprise a transparent support, wherein said transparent support can have a thickness of 20 to 500 μm and can be subjected to a surface treatment (column 26, lines 7-12). The examiner reasons that a surface treatment could include an anti-reflection layer, taking into account the information above that the polarizing plate could be used in an antireflection film. This reasonably anticipates the applicant's claim of a transparent support coated with an anti-reflection layer.

7. The subject matter of Claims 9-10 and 16-18 are described in column 2, lines 15-18, where the polarizing plate comprises a polarizing membrane, an optically anisotropic layer A and an anisotropic layer B, which is the structure claimed by the applicant. The possible director angles for the liquid crystal molecules are disclosed in column 12, lines 29-32 for rod-like molecules, and column 12, lines 44-47 for discotic molecules.

Pertaining to Claims 9-10, the range of values for each anisotropic layer anticipates the 10° difference between the first and second anisotropic layers as claimed by the applicant. The range of rod-like molecules from 0° to 40° also overlaps the applicant's stipulation that the molecules are oriented at an angle of less than 5° .

For Claims 16-18, the reference teaches the orientation of discotic molecules to be 50° to 90° , anticipating the orientation angle of more than 5° of the applicant. The reference's range of rod-like molecules from 0° to 40° also overlaps the applicant's

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stipulation that the rod-like molecules in the second anisotropic layer are oriented at an angle of more than 15°.

8. The subject matter of Claims 13 and 15 are described column 12, lines 45-57. The applicant claims that the second optically anisotropic layer comprises discotic liquid crystal molecules, which are described by Arakawa et al. to have an orientation angle in the range of 50° to 90°. This anticipates Claim 13, that the orientation angle is more than 15°, and also Claim 15, of having an orientation angle of more than 85°.

9. The subject matter of Claim 19 is described in column 12, lines 31-32, where Arakawa et al. state that the inclination angle of the rod-like liquid crystal molecule is in the range of 0° to 40°, which anticipates the applicant's claim that the orientation angle is less than 5°.

10. The subject matter of Claim 21 is described in column 2, lines 15-18, where a quarter wave plate is described that consists of a first optically anisotropic layer A and a second anisotropic layer B. The fact that the first layer A is anisotropic implies that it must have a certain ordered arrangement. It would be inherent to the system that the first anisotropic layer would lend a particular orientation to the second anisotropic layer B when they are in contact. Therefore, the claim is rendered unpatentable.

11. The subject matter of Claim 22 is described in column 26, lines 36-37, where the polarizing plate could be used in various optical devices, including a liquid crystal display, as claimed by the applicant.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (6,400,433) as applied to Claim 1 above, and further in view of Ito et al. (JP publication no. 2000-30493).

Arakawa et al. teach a polarizing plate which consists of an optically anisotropic layer which is formed on a polarizing membrane (column 2, lines 15-18).

The reference by Ito et al. describes an optically anisotropic layer in which discotic liquid crystal molecules have a horizontal orientation with respect to the substrate [0006].

The use of discotic structures in a manner where the discotic planes are oriented at an angle of less than 5° (horizontal) is a known orientation for discotic liquid crystal molecules in optically anisotropic layers. It would have been obvious to one skilled in the art to use this orientation.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (6,400,433).

Arakawa et al. teach a polarizing plate that includes a polarizing membrane. The reference is silent as to the thickness of the membrane, but states that a motivation for the invention is that current polarizing plates are relatively thick (column 2, lines 4-5), and that using liquid crystals as the optically anisotropic layer allows for a thinner polarizer (column 2, lines 41-46). As the motivation for the invention is to create a thinner polarizing plate, it would have been obvious to one of ordinary skill in the art to use a polarizing membrane with a thickness of 20 μm or less.

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15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (6,400,433) as applied to Claim 7 above, and further in view of Uchida et al. (2003/0179456).

Arakawa et al. teach that the polarizing plate can be used in various optical devices, such as a liquid crystal display (column 26, lines 36-37) .

Uchida et al. teach that a light-diffusing layer may be laminated on to a component of a liquid crystal display, such as a polarizing plate [0047].

It would have been obvious to one of ordinary skill in the art to combine a light-diffusing layer with a polarizing plate, since it is a common component of liquid crystal displays.

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (6,400,433) as applied to claim 10 above, and further in view of Ito et al. (JP Publication no. 2001-166145).

Arakawa et al. teach a polarizing plate wherein the rod-like liquid crystal molecules in the optical anisotropic layers are oriented at an angle between 0° and 40° to the surface of the polarizing membrane (column 12, lines 29-32).

The reference describes a polarizing plate in which the tilt angle of the cylindrical liquid crystal changes in relation to the distance of the liquid crystal molecule from the optically anisotropic plane [0005].

It would have been obvious to one of ordinary skill in the art to vary the angle of orientation of rod-like liquid crystal molecules as a function of the distance from the polarizing membrane, because it was already a widely known method at the time of the invention.

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17. Claims 3, 11, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arakawa et al. (6,400,433) as applied to Claims 2, 10 and 19 above, and further in view of Ito et al., Japanese publication (JP 2001-166145).

Arakawa et al. teach a structure that consists of two optically anisotropic layers in contact with each other, to create a quarter wave plate for a circular polarizer, wherein the anisotropic layers would consist of liquid crystal molecules (column 2, lines 15-25).

Ito teaches an elliptical polarizing plate that consists of two optically anisotropic layers, wherein the optimum angle between the largest refractive index and the layer plane is disclosed for each layer [0005].

Because both references deal with elliptical polarizing plates using two optically anisotropic layers, would have been obvious to one of ordinary skill in the art to determine the proper alignment of the liquid crystal molecules in each layer that would achieve the orientation angles disclosed by Ito.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason A. Sese whose telephone number is 571-270-3473. The examiner can normally be reached on Mon-Thurs 8:00 am -5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

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applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason A. Sese
Examiner
Art Unit 1709



D. LAWRENCE TARAZANO
PRIMARY EXAMINER

